

REMARKS

Claims 1, 3-6, 8-23 and 30-36 are pending and rejected in this application. Claims 1, 9, 11, 14, 19, 20, 22, 23, 30, 34 and 36 are amended; and claim 43 is added hereby.

Claim 43 has been added to further protect the Applicants' valuable property rights in the present invention. The elements of the claim are disclosed in the specification and no new matter has been added.

Responsive to the Examiner's objection to the specification, Applicants have amended the specification hereby, keeping in mind the comments offered by the Examiner. Accordingly, Applicants submit that the specification is now in allowable form.

Responsive to the Examiner's objection to the abstract, the abstract has been amended including each and every element of claim 1 as amended herein. Applicants submit that the abstract is now in allowable form.

Responsive to the rejection of claims 14-16 and 18-21 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 24 of U.S. Patent No. 6,213,929 (May), Applicants have herewith submitted a Terminal Disclaimer to obviate the Examiner's rejection. Accordingly, Applicants submit that claims 14-16 and 18-21 are now in condition for allowance which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-8 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,364,335 (Franzen et al.), Applicants have amended claims 1 and 36, and submit that claims 1, 3-8 and 36 are now in condition for allowance.

Franzen, et al. disclose a disc-decanter centrifuge 1 (Fig. 1) supported by a support structure 2 and including a free translating pendular drive system 4, bowl assembly 6 and back drive assembly 8. Drive system 4 includes motors 10a, 10b capable of generating rotational

speeds of at least 6,000 rpm (column 2, lines 45-56). Drive system 4 rotates shaft 5 which in turn causes bowl 56, disc carrier 64 (Fig. 2) and discs 66 to rotate at the same rotational speed (column 3, line 68 through column 4, line 2). Bowl assembly 6 includes bowl 56, cylindrical screw conveyor 65, disc carrier 64, circular discs 66, distributor 62, accelerator 73 and conically shaped screw conveyor 71 (column 4, lines 41-44). Overflow passage 76 is formed in end 58 of bowl 56. Bore 60 is coaxially aligned with shaft 5 and receives feed pipe 50 (Fig. 3; column 4, lines 63-66). Discs 66 cooperate with the centrifugal force created by the rotation of bowl 56 so as to incrementally separate the solids from the liquid slurry. As the slurry moves inward along discs 66, the solids collect on the underside of discs 66 (column 7, lines 15-20).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Franzen et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Franzen et al. disclose a disc-decanter centrifuge having discs arranged about an axis of rotation. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the angled disc of Franzen et al. Solids in Franzen et al. move outward underneath a side of disc 66 and through openings 110. While Franzen et al. has a series of discs arranged along the axis of rotation, the present invention has a plurality of surfaces arranged in a radially outward manner from the axis of rotation. Therefore, Franzen et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter,

the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast claim 36, as amended, recites in part:

filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Franzen et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Franzen et al. disclose a disc-decanter centrifuge having discs arranged about an axis of rotation. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the angled disc of Franzen et al. Solids in Franzen et al. move outward underneath a side of disc 66 and through openings 110. While Franzen et al. has a series of discs arranged along the axis of rotation, the present invention has a plurality of surfaces arranged in a radially outward manner from the axis of rotation. Therefore, Franzen et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including a plurality of

filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through allowing the oil to proceed at a reduced rate thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36, is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-8 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,647,686 (Drury), Applicants have amended claims 1 and 36, and submit that claims 1, 3-8 and 36 are now in condition for allowance.

Drury discloses a centrifugal separating apparatus including a base frame 10 (Fig. 1; column 2, lines 10-13). A journal 15 (Fig. 2) supports in a bore 16 thereof a vertically disposed shaft 18 (column 2, lines 24-25). Supported on a top surface of disk 22 is a frusto conical concentrating bowl 24 rotated by a motor 26 (column 2, lines 31-42). Mounted in bowl 24 is a frusto conical basket 40, a wall portion 41 of which is constructed of wire mesh (column 3, lines 18-21). Basket 40 creates a turbulence in the water which carries the material introduced into bowl 24 and holds fabric closely against bowl 24. Disposed between basket 40 and the interior wall of bowl 24 is a fabric bag 47 which entraps the particles of metal separated from the material treated in bowl 24 (column 3, lines 27-40). Bowl 24 is fed from a feed chute 58 (column 3, line 57).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Drury or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Drury discloses a centrifugal separating apparatus including a bowl 24 in which is mounted a frusto conical basket 40, a wall portion 41 of which is constructed of wire mesh. In contrast, the present invention includes a filter media that is arranged in a radially outward manner which may consist of concentric cylinders or a spiral type arrangement, which is unlike the wire mesh of Drury. Therefore, Drury and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast claim 36, as amended, recites in part:

filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Drury or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Drury discloses a centrifugal separating apparatus including a bowl 24 in which is mounted a frusto conical basket 40, a wall portion 41 of which is constructed of wire mesh. In contrast, the present invention includes a filter media that is arranged in a radially outward manner which may consist of concentric cylinders or a spiral type arrangement, which is unlike the wire mesh of Drury. Therefore, Drury and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36, is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-9 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,891,041 (Hohmann et al.), Applicants have amended claims 1, 9 and 36, and submit that claims 1, 3-9 and 36 are now in condition for allowance.

Hohmann, et al. disclose a separating device 100 (Fig. 1) including an upper housing part 1 and a lower housing part 13. A drive motor 2 has a vertical drive shaft 3 and is secured to an upper surface of upper housing part 1. Drive shaft 3 has two shaft sections 3a and 3b. A dynamically balanced collecting vessel 5, which serves as a container for a centrifuge, is torsionally connected by axially detachable from a lower shaft section 3b (column 3, lines 5-18). Lower housing part 13 is connected to upper housing part 1 by threaded fasteners which engage annular flange 13a (column 3, lines 34-36). Upper housing part 1 has an admission channel 18 via which liquid enriched with solid particles can enter into an annular distribution space 19 with a pipe-shaped nozzle 20 (column 3, lines 44-50). Collecting vessel 5 has transversely extending partitions 21 which form chambers 22 which are connected to opening 24 and to one another by openings 23. A liquid introduced into admission channel 18 and nozzle 20 flows into outlet channel 25 via opening 24 (column 3, lines 55-67). Partitions 21 and chambers 22 intercept the entrained solid particles as they are pressed against outer wall 27 by centrifugal forces during rotation of container 5 (column 4, lines 4-9). The start-up time of motor 2 until the nominal speed is reached is measured with a light barrier arrangement 28 (column 4, lines 39-43).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Hohmann, et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Hohmann, et al. disclose a separating device having an upper housing part 1 with an admission channel 18 by way of which liquid, enriched with solid particles, can enter into an

annular distribution space 19 with a pipe-shaped nozzle 20. Collecting vessel 5 has transversely extending partitions 21 which form chambers 22, which are connected to opening 24 and to one another by openings 23. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the chambers of Hohmann, et al. Therefore, Hohmann, et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Hohmann, et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Hohmann, et al. disclose a separating device having an upper housing part 1 with an admission channel 18 by way of which liquid, enriched with solid particles, can enter into an annular distribution space 19 with a pipe-shaped nozzle 20. Collecting vessel 5 has transversely extending partitions 21 which form chambers 22, which are connected to opening 24 and to one another by openings 23. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the chambers of Hohmann, et al. Therefore, Hohmann, et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 9 is now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 36, as amended, recites in part:

filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Hohmann, et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Hohmann, et al. disclose a separating device having an upper housing part 1 with an admission channel 18 by way of which liquid, enriched with solid particles, can enter into an annular distribution space 19 with a pipe-shaped nozzle 20. Collecting vessel 5 has transversely extending partitions 21 which form chambers 22, which are connected to opening 24 and to one another by openings 23. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the chambers of Hohmann, et al. Therefore, Hohmann, et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-6, 8-10 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,656,164 (Vado et al.), Applicants have amended claims 1, 9 and 36, and submit that claims 1, 3-6, 8-10 and 36 are now in condition for allowance.

Vado et al. disclose a compact apparatus for centrifugal separation including a housing 2 and a motor 3 (Figs. 1 and 2). There are channels 12 in housing 2 which allow the entrance of a

liquid that is to be centrifuged. The liquid, such as engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. The heavier liquid, which is the water, remains within the cartridge, while the lighter liquid, the fuel oil, passes through channels 7 and 8 to be sent to the boat engine. Filter 11 eliminates solid impurities (column 2, line 41 through column 3, line 5).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the single cavity cartridge of Vado et al. Therefore, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the

filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-6 and 8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the single cavity cartridge of Vado et al. Therefore, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the

filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 9, and claim 10 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 36, as amended, recites in part:

filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the single cavity cartridge of Vado et al. Therefore, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next

to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-6, 8, 14, 16-22, 34 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 2,745,217 (Gold et al), Applicants have amended claims 1, 14, 34 and 36, and submit that claims 1, 3-6, 8, 14, 16-22, 34 and 36 are now in condition for allowance.

Gold et al. discloses a machine for improving the keeping qualities of plants and restoring wilted plants to their full freshness (Fig. 5) including a base 10 of circular form having an upwardly extending flange 11 and an outer cylindrical casing 14. An inner cylindrical casing 16 is mounted around drum 17, which contains the plants and annular ring 15. The inside of outer casing 14 forms, with the two casings, an annular space into which water thrown from drum 17 is discharged and collected, and at a suitable point it is drained by way of a connection to an aperture in the annular ring to an upper end of a pipe 18 (column 1, lines 52-68). Plants to be treated are carried in a receptacle 29, that is of substantially the same dimensions as drum 17, so as to easily fit therein. Receptacle 29 has a perforated bottom and sides and is provided with short legs so that its lower end is raised away from the base of drum 17. The bottom of drum 17 is secured to a circular flange 22 which is fixed to the upper end of shaft 24 of an electric motor 25, which rotates drum 17 and receptacle 29 (column 2, lines 12-28).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Gold et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Gold et al. disclose a machine for improving the keeping qualities of plants and restoring wilted plants to their full freshness including an inner cylindrical casing 16 mounted around drum 17, which contains the plants and annular ring 15. The inside of outer casing 14 forms, with the two casings, an annular space into which water thrown from drum 17 is discharged and collected. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the cylindrical casing of Gold et al. Therefore, Gold et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-6 and 8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 14, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Gold et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Gold et al. disclose a machine for improving the keeping qualities of plants and restoring wilted plants to their full freshness including an inner cylindrical casing 16 mounted around drum 17, which contains the plants and annular ring 15. The inside of outer casing 14 forms, with the two casings, an annular space into which water thrown from drum 17 is discharged and collected. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the cylindrical casing of Gold et al. Therefore, Gold et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 14.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 14, and claims 16-22 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 34, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Gold et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Gold et al. disclose a machine for improving the keeping qualities of plants and restoring wilted plants to their full freshness including an inner cylindrical casing 16 mounted around drum 17, which contains the plants and annular ring 15. The inside of outer casing 14 forms, with the two casings, an annular space into which water thrown from drum 17 is discharged and collected. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the cylindrical casing of Gold et al. Therefore, Gold et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 34.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable.

For the foregoing reasons, Applicants submit that claim 34 is now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 36, as amended, recites in part:

filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Gold et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Gold et al. disclose a machine for improving the keeping qualities of plants and restoring wilted plants to their full freshness including an inner cylindrical casing 16 mounted around drum 17, which contains the plants and annular ring 15. The inside of outer casing 14 forms, with the two casings, an annular space into which water thrown from drum 17 is discharged and collected.

In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the cylindrical casing of Gold et al. Therefore, Gold et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable.

For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3, 6-8, 14, 18-22, 34 and 36 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 3,007,629 (Boyland), Applicants have amended claims 1, 14, 34 and 36, and submit that claims 1, 3, 6-8, 14, 18-22, 34 and 36 are now in condition for allowance.

Boyland discloses a centrifuge (Fig. 1) including a cylindrical fixed body 10 with two end plates 11 and 12. Within this outer casing there is rotatably mounted a rotor including a substantially cylindrical shell 13. The rotor also includes radial webs 31 and sheet metal partitions 32 both extending over substantially the whole internal axial length of the rotor. Apertures 36 connect the interior of the extraction chambers formed between webs 31 and partitions 32 with space 27. These apertures are near the radially outer parts of the extraction chambers (column 1, line 55 through column 2, line 25).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Boyland or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Boyland discloses a centrifuge including an outer casing within which there is rotatably mounted a rotor including a substantially cylindrical shell 13. The rotor also includes radial webs 31 and sheet metal partitions 32 both extending over substantially the whole internal axial length of the rotor. In contrast, the present invention includes a filter media that is arranged in a radially

outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the sheet metal partitions of Boyland. Therefore, Boyland and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3 and 6-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 14, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Boyland or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Boyland discloses a centrifuge including an outer casing within which there is rotatably mounted a rotor including a substantially cylindrical shell 13. The rotor also includes radial webs 31 and sheet metal partitions 32 both extending over substantially the whole internal axial length of the rotor. In contrast, the present invention includes a filter media that is arranged in a radially

outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the sheet metal partitions of Boyland. Therefore, Boyland and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 14.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 14, and claims 18-22 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 34, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Boyland or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Boyland discloses a centrifuge including an outer casing within which there is rotatably mounted a rotor including a substantially cylindrical shell 13. The rotor also includes radial webs 31 and sheet metal partitions 32 both extending over substantially the whole internal axial length of the rotor. In contrast, the present invention includes a filter media that is arranged in a radially

outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the sheet metal partitions of Boyland. Therefore, Boyland and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 34.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 34 is now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 36, as amended, recites in part:

filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Boyland or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Boyland discloses a centrifuge including an outer casing within which there is rotatably mounted a rotor including a substantially cylindrical shell 13. The rotor also includes radial webs 31 and sheet metal partitions 32 both extending over substantially the whole internal axial length of the rotor. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is

unlike the sheet metal partitions of Boyland. Therefore, Boyland and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 36.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3 and 6-13 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 5,779,618 (Onodera et al.), Applicants have amended claims 1, 9 and 11, and submit that claims 1, 3 and 6-13 are now in condition for allowance.

Onodera et al. disclose a centrifugal separating filter (Fig. 1). Exhaust gas from engine 1 is used as a driving source for turbine driving device 20, which spins inner cylinder 11 into which a fluid is passed and is discharged through exhaust nozzles 13 and out opening 19. Screen 17 is rotatable along with housings 11.

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Onodera et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Onodera et al. disclose a centrifugal separating filter that uses exhaust gas from engine 1 as a driving source for turbine driving device 20, which spins inner cylinder 11 into which a fluid is passed and is discharged through exhaust nozzles 13 and out opening 19. Screen 17 is rotatable along with housings 11. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the screen of Onodera et al. Therefore, Onodera et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3 and 6-8 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Onodera et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Onodera et al. disclose a centrifugal separating filter that uses exhaust gas from engine 1 as a driving source for turbine driving device 20, which spins inner cylinder 11 into which a fluid is passed and is discharged through exhaust nozzles 13 and out opening 19. Screen 17 is rotatable along with housings 11. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the screen of Onodera et al. Therefore, Onodera et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 9, and claim 10 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 11, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Onodera et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Onodera et al. disclose a centrifugal separating filter that uses exhaust gas from engine 1 as a driving source for turbine driving device 20, which spins inner cylinder 11 into which a fluid is passed and is discharged through exhaust nozzles 13 and out opening 19. Screen 17 is rotatable along with housings 11. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the screen of Onodera et al. Therefore, Onodera et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 11.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 11, and claims 11-13 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

Claim 23 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Gold et al. or Boyland in view of U.S. Patent No. 3,942,716 (Jacobson). However, claim 23 depends upon claim 14, and claim 14 has been placed in condition for allowance for the reasons given

above. Accordingly, Applicants submit that claim 23 is now in condition for allowance, which is hereby respectfully requested.

Responsive to the rejection of claims 1, 3-7, 9-15, 18-21, 23 and 30-36 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,904,841 (Penny) in view of Vado et al., Applicants have amended claims 1, 9, 11, 14, 30, 34 and 36, and submit that claims 1, 3-7, 9-15, 18-21, 23 and 30-36 are now in condition for allowance.

Penny discloses a fluid circulation centrifugal cleaner with pressure regulator (Figs. 1(a) and 2(a)) including a base 11, a rotor 12 and a housing 14. Rotor 12 is mounted on a substantially vertical axis 13 for rotation thereabout. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Supply fluid is forced outwardly by rapid rotation of rotor 12 due to the reaction of the ejection of the supply fluid to sump 15 by way of rotor nozzles 18 and 19 in the base thereof (column 1, lines 23-38).

In contrast, claim 1, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator including a base 11, a rotor 12 and a housing 14. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Vado et al. disclose a compact apparatus for centrifugal separation wherein engine

fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the housing of Penny and the single cavity cartridge of Vado et al. Therefore, Penny, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 1.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 1, and claims 3-7 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In further contrast, claim 9, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator including a base 11, a rotor 12 and a housing 14. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the housing of Penny and the single cavity cartridge of Vado et al. Therefore, Penny, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 9.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 9, and claim 10 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In still further contrast, claim 11, as amended, recites in part:

a filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator including a base 11, a rotor 12 and a housing 14. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the housing of Penny and the single cavity cartridge of Vado et al. Therefore, Penny, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 11.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 11, and claims 12 and 13 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 14, as amended, recites in part:

filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator including a base 11, a rotor 12 and a housing 14. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the housing of Penny and the single cavity cartridge of Vado et al. Therefore, Penny, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 14.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next

to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 14, and claims 15, 18-21 and 23 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 30, as amended, recites in part:

a filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator including a base 11, a rotor 12 and a housing 14. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the housing of Penny and the single cavity cartridge of Vado et al. Therefore, Penny, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 30.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby

increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 30, and claims 31-33 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 34, as amended, recites in part:

a filter media disposed within said filter, said filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator including a base 11, a rotor 12 and a housing 14. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the housing of Penny and the single cavity cartridge of Vado et al. Therefore, Penny, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media disposed within

the filter, the filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 34.

An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 34, and claim 35 depending therefrom, are now in condition for allowance, which is hereby respectfully requested.

In yet still further contrast, claim 36, as amended, recites in part:

filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from said axis of rotation;

(Emphasis added). Applicants submit that such an invention is neither taught, disclosed nor suggested by Penny, Vado et al. or any of the other cited references, alone or in combination and includes distinct advantages thereover.

Penny discloses a fluid circulation centrifugal cleaner with a pressure regulator including a base 11, a rotor 12 and a housing 14. A fluid inlet passage 16 is arranged to supply fluid at an elevated pressure to the interior of rotor 12 by way of the rotation axis 13 and a fluid drain passage 17. Vado et al. disclose a compact apparatus for centrifugal separation wherein engine fuel oil, along with its impurities and water, enters through channels 12 and goes into a single cavity cartridge 9, which is rotating with shaft 6 of motor 3. In contrast, the present invention includes a filter media that is arranged in a radially outward manner, which may consist of concentric cylinders or a spiral type arrangement, which is unlike the housing of Penny and the

single cavity cartridge of Vado et al. Therefore, Penny, Vado et al. and any of the other cited references, alone or in combination fail to disclose, teach or suggest a filter media including a plurality of filter surfaces sequentially arranged in a radially outward manner from the axis of rotation, as recited in claim 36.

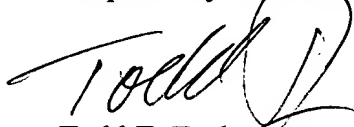
An advantage of Applicants' invention is that the filter media has a plurality of parallel oil paths for the oil to flow through, allowing the oil to proceed at a reduced velocity thereby increasing the effectivity of the filter media. Further, a high revolution spin is imparted to the filter media causing soot and other particles, that may be present in the oil, to be accelerated against a wall of the filter media. The centrifugal force places the soot and/or other particles next to a wall of the filter media to which they adhere. Additionally, the filter media is replaceable. For the foregoing reasons, Applicants submit that claim 36 is now in condition for allowance, which is hereby respectfully requested.

For the foregoing reasons, Applicants submit that no combination of the cited references teaches, discloses or suggests the subject matter of the amended claims. The pending claims are therefore in condition for allowance, and Applicants respectfully request withdrawal of all rejections and allowance of the claims.

In the event Applicants have overlooked the need for an extension of time, an additional extension of time, payment of fee, or additional payment of fee, Applicants hereby conditionally petition therefor and authorizes that any charges be made to Deposit Account No. 20-0095, TAYLOR & AUST, P.C.

Should any question concerning any of the foregoing arise, the Examiner is invited to telephone the undersigned at (260) 897-3400.

Respectfully submitted,



Todd T. Taylor
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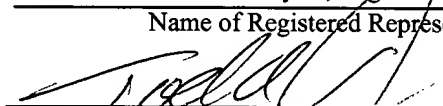
Attorney for Applicant

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Name of Registered Representative



Signature

October 15, 2003

Date

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